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## CLAIMS

What is claimed:

1. In the production of a stereo regular propylene polymer, the method comprising:
  - (a) operating a polymerization reactor under temperature and pressure conditions effective for the reaction of propylene supplied to said reactor to produce a stereo regular propylene polymer fluff;
  - (b) supplying a monomer stream containing propylene to said reactor;
  - (c) incorporating into said monomer stream a titanium-based supported Ziegler-Natta Catalyst having an internal electron donor and a titanium content in amount of at least 1.7 wt. %;
  - (d) supplying to said propylene monomer stream a co-catalyst comprising a tri-alkylaluminum wherein the co-catalyst is present in an amount to provide an aluminum/titanium molar ratio within the range of 50-500;
  - (e) supplying to said propylene monomer stream a silicone-based external electron donor in an amount to provide an aluminum silicon molar ratio within the range of 10-500; and
  - (f) recovering polymer fluff from said polymerization reactor having a melt flow rate of at least 200 grams/10 minutes and a xylene soluble content of no more than 4 wt.%.
2. The method of claim 1 wherein said Ziegler-Natta catalyst has a titanium content within the range of 1.7-2.2 wt.%.
3. The method of claim 2 wherein said Ziegler-Natta catalyst has a titanium content of at least 1.8 wt.%.

4. The method of claim 1 wherein said polymer fluff has a melt flow rate in excess of at least 300 grams/10minutes and a xylene soluble content of no more than 3.5 wt. %.

5. The method of claim 1 wherein said supported Ziegler-Natta catalyst comprises titanium tetrachloride on a magnesium-based support.

6. The method of claim 5 wherein said internal electron donor is di-butylphthalate.

7. The method of claim 6 wherein said external electron donor is cyclohexylmethyldimethoxysilane.

8. The method of claim 1 wherein said trialkyl aluminum co-catalyst is triethyl aluminum.

9. The method of claim 8 wherein said triethyl aluminum contains aluminum hydride in an amount of no more than 1 wt. %.

10. The method of claim 1 further comprising supplying hydrogen to said reactor in an amount of no more than 1 mole percent of the propylene supplied to said reactor.

11. The method of claim 10 wherein said hydrogen is supplied to said reactor in an amount within the range of 0.45-0.9 mole percent of the propylene supplied to said reactor.

12. In a process for polymerization of propylene with a Ziegler catalyst to provide a high melt flow index propylene polymer, the method comprising:

(a) providing a supported catalyst component comprising a titanium tetrahalide supported on a magnesium based support and an internal electron donor comprising a diester of an aromatic dicarboxylic acid, said catalyst component containing titanium in an amount within the range of 1.7-2.2 wt.%;

(b) providing a trialkyl aluminum co-catalyst component selected from the group consisting of trimethylaluminum and triethylaluminum;

(c) providing an organosilyl external electron donor component;

(d) combining said supported catalyst component, said organoaluminum co-catalyst component and said external electron donor component in relative amounts to provide an aluminum/silicon mol ratio within the range of 10-500 an aluminum/titanium molar ratio within the range of 50-500 and a silicon/titanium mol ratio within the range of 1-50;

(e) introducing said combined catalyst system into a polymerization reactor and into a contact with propylene;

(f) supplying hydrogen into said polymerization reactor; and

(g) within said polymerization reactor effecting polymerization of said propylene in the presence of said catalyst system to produce a polymer fluff having a melt flow rate of at least 300grams/10 minutes and a xylene soluble content of no more than 4 wt.%. .

13. The method of claim 12 wherein said Ziegler-Natta catalyst has a titanium content of at least 1.8 wt.%.

14. The method of claim 12 further comprising supplying hydrogen to said reactor in an amount of no more than 1 mole percent of the propylene supplied to said reactor.

15. The method of claim 16 wherein said hydrogen is supplied to said reactor in an amount within the range of 0.45-0.9 mole percent of the propylene supplied to said reactor.
16. The method of claim 14 wherein said internal electron donor is di-butylphthalate.
17. The method of claim 16 wherein said external electron donor is cyclohexylmethyldimethoxysilane.
18. The method of claim 17 wherein said trialkyl aluminum contains aluminum hydride in an amount of no more than 1 wt.%.
19. The method of claim 17 wherein said polymer fluff has a xylene soluble content of 2.8-3.5 wt.%.